funded, but expended as capital at the rate of about 500*l*. a year; 2000*l*. from Mr. John Dewrance, as a gift to the donation fund to secure the payment of interest amounting to 100*l*. a year, to be expended in accordance with the terms of the trust of that fund; 4000*l*. from the Misses Lawrence, the income to be devoted to research into the causes and cure of disease in man and animals, the gift being associated with the names of their father, Sir William Lawrence, F.R.S., and their brother, Sir Trevor Lawrence; 100*l*. from the late Sir Joseph Swan, in aid of the expenses of publication; 1650*l*. from the late Mr. W. Erasmus Darwin, without conditions.

On account of the war, the usual anniversary banquet was not held this year.

NOTES.

THE Academy of Natural Sciences of Philadelphia, at a special meeting held on November 24, presented the gold medal of the Hayden Memorial Geological Award to Prof. H. F. Osborn, in recognition of his brilliant palæontological studies. The presentation address was delivered by the president, the Hon. S. G. Dixon.

AT a meeting of the organising committee of the sixth International Congress of Photography, held at the rooms of the Royal Photographic Society, on Friday, November 27, it was unanimously decided to suspend the work of the committee until such time as the officers should consider it could be resumed successfully.

ON Tuesday, November 24, the Royal Geological Society of Cornwall, at its annual meeting at Penzance, presented Mr. Henry Dewey with the Bolitho gold medal for his work and papers on the survey of Devon and Cornwall. Mr. Dewey afterwards gave an account of his experiments which led him to attribute the formation of Spilosites and Adinoles to the presence of ferric or ferrous oxides in the slates into which the igneous rocks had intruded.

THE death is reported of Dr. C. S. Minot, the distinguished American anatomist, in his sixty-second year. He graduated at the Massachusetts Institute of Technology in 1872, and then spent several years in study in Europe. At Harvard University he held minor appointments from 1880 to 1888, when he became assistant professor of histology. In 1892 he became full professor, and in 1905 migrated to the James Stillman chair of comparative anatomy. Prof. Minot was a member of numerous American and foreign learned societies, and an honorary doctor of Yale, Toronto, St. Andrews, and Oxford. He was the author of "Human Embryology," "Bibliography of Vertebrate Embryology," "A Laboratory Text-book of Embryology," and "Age, Growth, and Death."

MR. JOHN BURROUGHS, of West Park, N.Y., the veteran writer and observer whose works on natural history and other subjects have made him famous among lovers of nature and good literature in the old world as well as the new, has sent to the New York *Tribune* a convincing letter in which he explains why he and other Americans have had their regard for Germany turned to aversion by the events of the present war. The spirit of Prussian militarism is unworthy of twentieth-century civilisation; and though the military machine which crushes the innocent and unoffending, and destroys things beautiful and precious, in the hope of accomplishing its purpose, may be efficient, it is neither admirable nor human. "War," concludes Mr. Burroughs, "as now waged by the Kaiser against Belgium and France, is but a high-sounding name for the collective murder and pillage and arson of a vast organised band of outlaws, and for my part I believe it is the last spectacle of the kind, and on such a scale, that the world will ever see."

IN the October number of the *Victorian Naturalist* Mr. F. Chapman describes the impression of the fruit of a Casuarina in the basalt of Victoria. Wood of an apparently existing species of the genus has been previously recorded from beneath 90 ft. of the basalt.

IN concluding his notes on a collecting trip in Borneo, in the November number of the *Zoologist,* Mr. J. C. Moulton records the discovery of a previously unknown mountain—Mount Merinjak—in the heart of the country on the border between Sarawak and Dutch Borneo. It is a flat-topped mountain of 2220 ft. elevation.

AT the Cage-Bird Show held at the Royal Horticultural Society last week, Mr. David Ezra, of 110 Mount Street, W., exhibited specimens of living humming-birds. The birds are stated to have been in London for the last six months or so. At this time of year they are kept in steam-heated cages, each furnished with a miniature furnace. The interiors are decorated with moss and orchids, the flowers of the latter furnishing the tiny inmates with nectar. When natural nectar fails, the birds are supplied with an artificial compound of honey, sponge-cake crumbs, and babies' patent food.

THE first part of an article on Japanese Lepidoptera and their larvæ, by Mr. A. E. Wileman, published in the June issue of the *Philippine Journal of Science,* is illustrated by three coloured plates of the caterpillars and pupæ of butterflies. A grass-green swallow-tail caterpillar marked with transverse golden bands harmonises in a striking manner with the trifoliate leaves of its food-plant, which have a yellow venation. Other articles in the same issue include one on Philippine medusas and a second on Philippine alcyonarians, both by Mr. S. F. Light. Two new generic types are named and described in the former and one in the latter; one of the new medusas, *Acromitus maculosus,* appears to be a very beautiful species, with a bell of fully 90 mm. in diameter. Lemnaloides, indicative of affinity with Lemnalia, is the name of the new alcyonarian.

THE fourth number of vol. ii. of the Science Bulletin of the Museum of the Brooklyn Institute is devoted to a report of the scientific results of a collecting expedition to South Georgia in a whaling brig, undertaken by Mr. R. C. Murphy during 1912 and 1913. The main objects of the trip were to obtain a collection of South Georgian birds, and skins, and skeletons of the sea-elephant. Unfortunately the latter part of the programme was not accomplished, although a considerable series of sea-elephant skulls was obtained. Despite the lack of definite arrangements for collecting invertebrates, a number of interesting specimens were secured, which, together with certain plants, form the subjects of notes by specialists embodied in the report. One of the new types is an eight-rayed starfish, described by Prof. Koehler, of Lyons, as *Anasterias octoradiata.* During the voyage to the south specimens of the male of the minute parasitic crustacean *Pandarus satyrus*—previously known only by females—were obtained on the fins of a shark.

THE October number of the *Emu* contains a translation of an article by Mr. L. Brasil (originally published in the *Bull. Soc. Linn. Normandie*), on the emeu of King Island. In the early part of last century, when Baudin's expedition landed there, that island abounded with emeus, which were, however, soon after killed off. Péron found emeus both on King Island and Kangaroo Island, and in the account of his voyage, published a plate showing one black-breasted and a second and larger whitish-breasted bird. The former, as represented by a female specimen in the Paris Museum, certainly came from Kangaroo Island, but it has been suggested by Mr. G. M. Mathews that the white-breasted bird came from King Island, and is either the extinct *Dromaeus minor,* or a second and distinct species, *D. spenceri.* This view is disputed by Mr. Brasil, who considers that both Péron's birds came from Kangaroo Island, and suggests that the whitish-breasted specimen represents the male, and the black-breasted (as attested by the Paris specimen) the female. Whether the Kangaroo Island *D. parvulus* is really distinct from the King Island *D. minor* is left an open question.

IN addition to a paper on the nomenclature of local birds and another on the probable mode of extermination of the moas, to which reference was made in the issue of NATURE of November 5, p. 265, under the title of "Ornithological Notes," the Transactions and Proceedings of the New Zealand Institute for 1913 contain communications in which several additions are made to the fauna of the Dominion and the surrounding sea. Among these is one by Mr. S. Berry, of California, on a collection of cephalopods from the Kermadoc Islands, in which two new species of Polypus (Octopus), and a new squid of the genus Abralia are named and described; two of the new forms are figured. Certain New Zealand fishes—two of which are described as new—form the subject of an illustrated note by Mr. E. R. Waite, the most generally interesting specimen being a ribband-fish (*Lophotes cepedianus*) taken in the Wellington district. Two plates illustrating a long paper by Mr. M. N. Watt on the eggs of New Zealand Lepidoptera are notable on account of the exceeding beauty of form and sculpture of some of the specimens figured. Botanists will be interested in a communication from Mr. T. F. Cheeseman on the rate of growth of the kauri pine (*Agathis australis*), and the age to which it attains. It has been asserted that one of these giant trees, with a diameter of 24 ft., is more than 4000 years old, and a second, of 22 ft. in diameter, not less than 3600. In the opinion of the author, based on the number of rings of growth and an estimate of the rate of growth at different ages, these figures should be reduced, respectively, to 1396 and 1280.

ATTENTION has been directed on several occasions in these columns to the excellent work accomplished by the Essex Field Club. Among its many activities is the assistance the members of the club render to the Essex Museum of Natural History at Stratford. The museum is under the control and management of the Higher Education Sub-committee of the Education Committee of the County Borough of West Ham, while the care and arrangement of the collections are undertaken by the council of the Field Club in pursuance of agreements with the West Ham Corporation. The club also interests itself in a second museum situated in Epping Forest, the whole of the arrangement and organisation of which has been carried out by the honorary curators, Messrs. W., B. G., and H. A. Cole, assisted by other members of the club. At the Stratford Museum is a library of some 3000 volumes on natural history and kindred sciences, and local teachers are encouraged to make free use of them. Facilities for class teaching at the museum have been arranged, and teachers may also borrow duplicate specimens for demonstration. The excellent work in these directions which is being done by the Essex Field Club shows how much enthusiastic local societies can assist in scientific education.

IN two recent papers Dr. W. E. Agar continues his studies on heredity and the life-cycle in the Daphniidæ. The larger paper, on "Experiments on Inheritance in Parthenogenesis" (Phil. Trans. Roy. Soc., No. B 323), consists of a very interesting study of inheritance in parthenogenesis. As is well known, Johannsen and others maintain that within a "pure line" there is no inheritance of size-variation; all such variability is regarded as due to environment, and not inherited. These conclusions have been criticised by Prof. Karl Pearson, who adduced the work of Warren on Daphnia and an Aphid as being opposed to them. Agar has made very full experiments with the Daphnid, *Simocephalus exspinosus,* supported by less extensive work on other Daphnids and on the Aphid Macrosiphum. He bred many generations from single females hatched from ephippia, and although when the ancestral correlations are worked out in a population derived from a number of ex-ephippio females, these correlations are considerable (0·3–0·6), yet the parental correlation is in general no greater than the grandparental, or even great-great-grandparental. When, however, a population is produced from a single ex-ephippio female, there is no correlation at all between parents or earlier ancestors and offspring. The ancestral correlation in the first case is due to the presence of many genotypes among the population; within the single genotype the correlation vanishes. The paper contains many other interesting points which cannot be alluded to in a short space. An earlier paper (in the *Journal of Genetics*, iii. (1914), p. 179) shows that in Simocephalus the idea of an inherent reproductive cycle is mistaken, and that the production of males probably depends on certain unknown factors acting in a cumulative manner over several generations.

The December issue of the *Fortnightly Review* contains an article by Mr. J. B. C. Kershaw on the effect of warfare upon commerce and industry. He shows that the fluctuations of our trade during the past half-century have been largely independent of the wars that have been carried on by our own and other countries. The effect of wars upon the trade of this country will be measured to a large extent by the degree of their interference with the fundamental occupation of agriculture in the countries involved, and the results will be manifest, not at the moment, but in the year or years directly following the war.

We have referred occasionally to the useful and somewhat laborious compilations of information relating to ice in the Southern Ocean contained in the monthly meteorological charts of the Indian Ocean issued by authority of the Meteorological Committee. The chart for December gives a table showing the number of instances, for each of the twelve months in the years 1885–1913, of reports that have reached the Meteorological Office. Out of a total of 1694 reports, 258 were for the year 1893 and 305 for the year 1906. The largest number of reports have been from ships traversing the South Atlantic, and mostly between Cape Horn and 40° S., and between 30° and 60° W., and the smallest number were from ships in the South Pacific; but it is pointed out that absence of ice in certain parts cannot be taken as proof that none existed. The highest of the bergs was 1700 ft. (June, 1884, 44° S., 49° E.); those of 1000 ft. are comparatively numerous. Bergs varying from five to twenty miles in length are frequently sighted south of 40° S.; and the tables show that icebergs extending from six to fifty miles in length are "far from uncommon" in the Southern Ocean.

In the November issue of *Symons's Meteorological Magazine* "The Practical Utility of a World Bureau of Meteorology" is again urged by Mr. W. M. Hays and Mr. H. H. Clayton (see Nature, October 1). The suggestions include: (1) the use of telegraphic weather reports from all available parts of the globe, for framing estimates of the effect of weather changes on crops, and (2) the unification and improvement of meteorological services generally. If such a scheme were really practicable as regards daily or seasonal weather forecasts, there could be little question of its general utility. The authors' own views upon the subject are supplemented by the opinions of eminent meteorological authorities, and in our issue of February 26 Dr. Shaw referred to the desirability of daily weather reports for the whole globe. To have any chance of success, such a plan as that now in question should (we presume) be recommended by the International Meteorological Committee as a body, but all efforts towards the creation of an independent institution at six international meetings, at least, led to no favourable result. The great enterprise of the U.S. Weather Bureau in establishing a daily service for the northern hemisphere may eventually aid the solution of the much more ambitious problem.

In Nature for October 15 we referred to the reported invention, by an Italian professor named Argentieri, of a "pocket" system of radio-telegraphy. We now learn from an Italian source that a gentleman of this name has been demonstrating a system of telegraphy before an Italian Government Committee, but what are the advantages claimed for the apparatus, and what its success, are at present being kept a secret by the parties concerned.

The value of magnetic tests as a means of determining the changes which occur in paramagnetic materials at high temperatures is well illustrated by a paper by Prof. Honda and Mr. T. Soné on the changes of structure of certain iron and chromium compounds, which appears in the August number of the Science Reports of the University of Sendai, Japan. From their observations it appears that although at very high temperatures magnetite, Fe_3O_4, is more stable than hæmatite, Fe_2O_3, at temperatures below 1300° C., the reverse is the case, and that magnetite, once it is heated above 1100° C., is almost entirely converted into hæmatite, and remains hæmatite on cooling again to ordinary temperatures. This deduction from the magnetic observations has been confirmed by weighings. Heating to 1300° C. appears to produce no structural change in chromic oxide, Cr_2O_3, but chromium trioxide, CrO_3, appears to undergo two non-reversible changes.

In a paper read before the Royal Society in 1909 Mr. S. Kinoshita showed that an α particle projected through a photographic film is capable, throughout the whole of its range, of making any grain of silver chloride it strikes developable. Since then, in company with Mr. H. Ikeuti, he has been using this method of tracing the paths of the α particles, and some of his results are reproduced in the September number of the Proceedings of the Tokyo Mathematico-Physical Society. The α particles were obtained from the end of a needle which had been rubbed on a metal surface previously exposed to radium emanation. The end was brought close up to or into contact with the photographic plate. After development the plate shows under the microscope a series of developed grains lying in straight lines radiating from, and forming a halo round the region of contact, extending 0·054 millimetre beyond the outside rim of the contact patch. These grains are distributed through the thickness of the photographic film, and are due apparently to the α particles from radium-C. Another series of developed grains close to the surface of the film appears to be due to α particles projected tangentially to the surface from active material slightly above it. A few grains still further afield the authors ascribe to β particles.

SUNSET "afterglows" resembling those seen after the memorable Krakatoa eruption were recorded on various occasions during the autumn and winter of 1913–14. We have now received from Prof. Ignazio Galli the third of a series of reports dealing briefly with these observations, this report being reprinted from the *Atti della pontifica Accademia romana dei nuovi Lincei,* vii., read last June. The phenomena were noticed for the first time at Rome on July 13, 1913, and about the same time at Bagnères de Bigorre, in the Pyrenees. The most noticeable display seems to have occurred on November 29, when it was recorded in France, Italy, Belgium, and England. At Rome the phenomenon was observed in a greater or less marked degree from February 15 onwards until April 10, but while in the typical afterglow the colour passes gradually from yellow through orange, sometimes mauve to a deep crimson, only the yellow and orange, sometimes only the yellow, were observed in the western horizon at Rome towards the end of this period. On the other hand, marked effects were recorded by Krebs in Holstein on December 31, when the moon added to the effect. The February glows were observed at Brussels, and particularly on February 19 in Morocco, where they were supposed at first to be due to an aurora borealis. In China, Father Corvillard describes fine displays on October 30, 1913, and April 18, 1914. Assuming these effects to be due to volcanic dust, as in the case of Krakatoa, Prof. Galli refers them to the eruptions of Katmai, in Alaska, on June 6, 1912, Asama-Yama in June 1913, Mount Benbow, in the New Hebrides, on December 6, and Sakarishima, in Japan, on January 11, 1914. These eruptions, especially the last, were accompanied by copious emission of dust, but whether the later date observations, particularly the Chinese one of April 18, were due to the last eruption, can scarcely be decided definitely on the evidence now submitted by Prof. Galli.

AN interesting paper on the presence of salicylic aldehyde in soils is contributed to the Journal of the Franklin Institute by Dr. Oswald Schreiner and Mr. J. J. Skinner. From certain soils, especially from some which had been used for intensive culture and greenhouse work, marked traces of an aldehyde could be extracted which showed the qualitative properties of salicylic aldehyde. The aldehyde extract was found to exercise a marked toxic effect on plant growth, and as the proportion of aldehyde is largest in the case of heavily manured greenhouse soils which have become "sick," there seems to be a relationship between the "sickness" and the proportion of aldehyde present. On the other hand, only a relatively small number of the poor soils examined showed the presence of the aldehyde, owing perhaps to the presence of other toxic substances. The material extracted by the aldehyde method was in all cases extremely small, and frequently gave no aldehyde reaction, although exercising marked toxic effect. What the harmful constituent in such cases is cannot yet be stated. In many instances the extract was not only not harmful, but exercised a stimulating effect on plant growth.

To the *Popular Science Monthly* for November Mr. R. Hugins contributes an interesting article on civilisation as a selective factor, in which it is contended that, contrary to the view generally put forward by writers in recent years, more particularly by Weismann and Wallace, there has been a real improvement of civilised man by an "agency at once powerful, comprehensive, and continuous." This agency may be designated the "elimination of the anti-social." The effect of this influence in modifying individual and national character is traced in its many forms, such as the elimination of the criminal, voluntary withdrawal, including suicide, occupational and geographical withdrawal, and, possibly most active of all, military selection, which by eliminating in the past large numbers of the predatory and intractable members of society has had the curious result that there has been an actual improvement of the military value of civilised races taking place side by side with the development of the moral character of those races. The reason for this apparent paradox is to be found in the fact that the same moral qualities have been selected through the elimination of the anti-social as are essential in the best armies—virtues such as obedience, the habit of discipline, self-control, and steadfastness.

WE have received a copy of a pamphlet entitled, "English, French, and German Vocabulary for Water Supply in the Field," prepared by Mr. Philip Parker, of 25 Victoria Street, S.W., for members of the expeditionary force. The pamphlet contains, in addition to what is implied by its title, a number of sentences in the three languages well calculated to be of great use to the soldier inquiring from a foreigner with regard to water supply. The words in the vocabulary, although necessarily not numerous, appear to be well chosen; the author, however, is apparently not very well informed as to some of the foreign equivalents of chemical terms, and some of the chemical formulæ are wrong. The pamphlet concludes with some instructions for the disinfection of water by chloride of lime. These notes are somewhat laconic and appear to supplement or emphasise other instructions on the same subject. The suggestions for a rough and ready method of determining the quantity of chloride of lime required are decidedly ingenious, but we fear that not only the suggested dose, which apparently works out at about three parts of active chlorine per million parts of water after fifteen minutes' contact, but, more particularly, the time of contact (fifteen minutes) of the water with the disinfectant are considerably too low for safety. Probably two or three times the dose with ten to fifteen hours' contact would be none too much to render a polluted water reasonably safe, and surely in a matter of this kind it is better to err on the side of safety. Apart from this, the pamphlet fulfils a very useful purpose, and we congratulate the author on the service he has rendered to our troops by producing it.